

ACANTHOCEPHALA COLLECTED BY THE AUSTRALIAN NATIONAL
ANTARCTIC RESEARCH EXPEDITION ON HEARD ISLAND AND
MACQUARIE ISLAND DURING 1948-50

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SUMMARY

Three Acanthocephala are recorded from the sub-Antarctic Islands: *Aspersentis austrinus* van Cleave, *Corynosoma bullosum* (von Linstow) and *Corynosoma clavatum* Gosse. *Corynosoma* sp. is also recorded from a penguin.

INTRODUCTION

Most of the Acanthocephala described in this report were collected by R. G. Chittleborough and E. H. M. Ealey while stationed with the A.N.A.R.E. at Heard Island during 1949. Two species were collected by N. M. Haysom at Macquarie Island in the same year.

LIST OF PARASITES EXAMINED ARRANGED ACCORDING
TO THEIR HOSTS

FISH

NOTOTHENIA CORIICEPS Richardson—*Aspersentis austrinus* van Cleave, 1929, and structure in both sexes is 0.25 mm. and occurs toward its posterior extremity. larval form of *Corynosoma bullosum* (von Linstow, 1892), Heard Island.

NOTOTHENIA CYANOBRANCHA Richardson—*Aspersentis austrinus* van Cleave, 1929, Heard Island.

BIRDS

PHALACROCORAX ATRICEPS NIVALIS Falla *Corynosoma clavatum* Gosse, 1940, Heard Island.

PYGOSCELIS PAPUA Forster—*Corynosoma* sp., Macquarie Island.

MAMMALS

MIROUNGA LEONINA Linn.—*Corynosoma bullosum* (von Linstow, 1892), Heard and Macquarie Islands.

HYDRURGA LEPTONYX (de Blainville)—*Corynosoma bullosum* (von Linstow, 1892), Heard Island.

DESCRIPTION OF PARASITES

ASPERSENTIS AUSTRINUS van Cleave, 1929

Fig. 1

Heard Island—Catalogue number of collections 233, 426, 428, 428, 488, 489.

About 30 specimens of this parasite, most of which are females, were found in the intestine of the fish, *Notothenia coriiceps* and *N. cyanobrancha*.

The length of the body or trunk of the males excluding the proboscis is 4.4-5.1 mm., and of the females 6.4-9.2 mm. The maximum width of the males is 1.2 mm., and of the females 2.2 mm. Two females which had contracted very much in length and whose shape seemed abnormally rounded were 3.3 mm. wide. The length of the proboscis, which when fully extended is curved ventrally to a slight extent, lies between 0.75 and 0.85 mm. The minimum width of the There is an unarmed neck up to 0.3 mm. long. The proboscis is armed with 14 rows of 9-11 hooks per row and the hooks on its ventral surface are largest.

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The maximum length of the proboscis sheath is 1.3 mm. The body wall is thick and the anterior ventral surface of the worm is armed with body spines. The lemnisci are a little longer than the proboscis sheath.

The testes are oval in shape and of approximately equal size; their maximum length is 0.75-0.90 mm. and width 0.44-0.60 mm. Six cement glands are present and their ducts remain separate almost to the base of Sacffigen's pouch.

The uterus is as much as 2.6 mm. long, and in some cases much distended with eggs; its maximum width is 0.32 mm. Ripe eggs are 78-85 μ long and 18-25 μ wide and possess polar prolongations.

Four smaller specimens of *A. austrinus* were obtained from the intestine of *Notothenia cyanobranchia*. The four worms consisted of two males and two females. In two specimens the proboscis was extended sufficiently to make identification possible.

Aspersenlis austrinus was described by van Cleave (1929) from "*Trematomus* or *Notothenia*" from South Georgia. *Rhadinorhynchus wheeleri* Baylis 1929 from *Notothenia rossii* seems to be synonymous with *A. austrinus*.

CORYNOSOMA CLAVATUM Gosse, 1940

Fig. 2

Heard Island—Catalogue number of collection 201.

Two male and five female specimens of this parasite were found in the intestine of the shag, *Phalacrocorax atriceps*. The worms are small and their shape resembles that of a pipe with a large bowl. In none of the specimens was the proboscis fully everted, and in all cases it had sunk below the rim of the bowl. The length of the parasites measured from the most anterior point of the bowl in a straight line to the genital aperture is in the case of the males 2.1-2.3 mm. and of the females 2.3-2.7 mm. The maximum width or diameter of the circular bowl or disc of the males is 1.5 mm. and the females 1.6 mm. The introvert, consisting of an armed and small unarmed portion, would be about 0.8 mm. long when fully extended; its maximum width about 0.3 mm. The proboscis is armed with 16 longitudinal rows of hooks. The exact number of hooks in each row has not been determined with certainty. It is estimated that there would be 10-11. The posterior four hooks of each row are smallest and the fifth or sixth hook of each row is the largest. The size and shape of the largest hook is shown in fig. 2. The proboscis sheath is double walled and its maximum length is 1.0 mm. The anterior region of the parasite, the disc or bowl, bears numerous rows of small spines about 28 μ long. The remainder of the body is devoid of spines, except the genital region which bears a few very small spines. The genital spines are particularly noticeable in the two male specimens. Eggs 73-76 μ long and 32-36 μ wide were present in two of the females.

C. clavatum has now been reported from a number of shags in the southern hemisphere; by Gosse (1940) from *Phalacrocorax ater*, *P. melanoleuca* and *P. varius*, and by Johnston and Best (1942) from *P. varius*. The larval form has been reported from the fish, *Platycephalus fuscus*, by Johnston and Edmonds (1952).

CORYNOSOMA BULLOSUM (con Linstow, 1892)

Fig. 3-5

Heard Island—Catalogue number of collections 144, 218, 219, 304, 361, 426, 427, 428, 470, 483, 503.

Macquarie Island—MI/49/P7.

ADULT FORM

A very good collection consisting of over 100 specimens in an excellent state of preservation were obtained from the intestine of the sea elephant,

Mirounga leonina. Two specimens were also found in material collected from the intestine of the sea leopard, *Hydrurga leptonyx*. Most of the specimens were yellow to orange in colour.

The maximum length (excluding the proboscis) of the males is 6.2 mm., and of the females 12.2 mm.; the maximum width (in the anterior region) of the males is 1.6 mm., and of the female 1.9 mm. The proboscis is cylindrical in shape and 0.94-1.10 mm. long. Its maximum width is about 0.26 mm. It is armed with 15-16 longitudinal rows of 11-13 hooks per row. Except for the posterior 3 or 4 there is little differentiation in their size and shape (fig. 3).

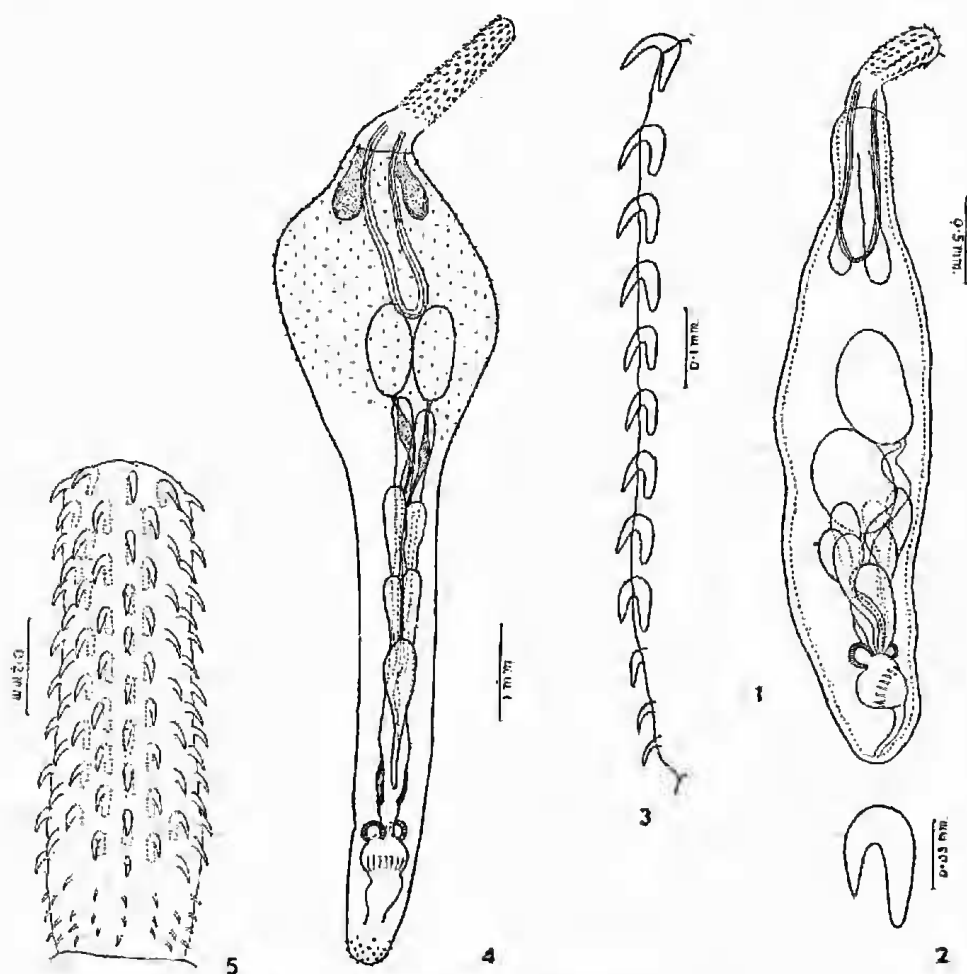


Fig. 1—*Aspersentis austrinus*. Adult male.

Fig. 2—*Corynosoma clavatum*. Largest proboscis hook.

Fig. 3-5—*Corynosoma bullosum*. Fig. 3, proboscis hooks; fig. 4, adult male; fig. 5, proboscis

There is an unarmed neck as long as 0.4 mm. The proboscis sheath is double walled; its maximum length is 1.4 mm., and width 0.30 mm. An elliptical ganglion is present near the middle of the sheath. The anterior swollen portion of the body and the genital region of both sexes bears small spines.

Two oval-shaped testes of approximately equal size lie in most specimens at about the same level; their maximum length is 0.7-0.9 mm., and width 0.32-0.45 mm. There are six long tubular cement glands arranged in pairs. The testes and cement glands are placed in most specimens so as to make the male bilaterally symmetrical. Two vasa deferentia unite about the level of Sacffigen's

pouch. There is a well developed bursa everted in a number of specimens and bearing about 20 rays.

The female system consisting of a bell, uterus and vagina is as much as 3.5 mm. long. The vaginal complex consists of three bulbs. The posterior region of a number of females forms an introvert up to 0.5 mm. long. Ripe eggs with polar prolongations of the middle shell are 93-105 μ long and 20-26 μ wide.

C. bullosum has been reported previously (Meyer 1932) from *M. leonina*.
LARVAL FORM

Some specimens consisting of 14 cysts, 3 larvae emerging from cysts and 2 freed larvae, collected from the mesentery of *Notothenia coriiceps*, have been identified as *C. bullosum*. The cysts are oval to kidney-shaped and white in colour. Their maximum length is 1.6-2.0 mm., and width 0.7-0.9 mm. The identification is based on an examination of the emerging and freed larvae. The two larvae which had lost their cyst cases are females. The length of their body measured from the base of the proboscis to the genital aperture is 3.5-3.7 mm. The maximum width of the anterior swollen body region is 1.2-1.4 mm. The proboscis, 0.90-0.96 mm. long and about 0.26 mm. wide, bears 16 longitudinal rows of hooks, each row consisting of 13 hooks. The anterior portion of the body and the region surrounding the genital aperture bear small spines.

The larval form of *C. bullosum* has been recorded from the peritoneum of *Chaenocephalus aceratus* by Baylis (1929).

CORYNOSOMA sp.

Macquarie Island. MI/49/P33.

Four immature acanthocephala were obtained from the intestine of the penguin, *Pygoscelis papua*. The proboscis of none of the specimens is fully extended and the reproductive organs are in the early stages of development. The anterior swollen portion of the body and the ventral surface of the parasites bear small spines. The genital aperture is surrounded with very small spines. Identification, however, will have to be withheld until more material is available for examination.

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